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Baker Botts L.L.P.
2001 Ross Avenue
Dallas, TX 75201-2980

EXAMINER

AVELLINO, JOSEPH E

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/712,017

Applicant(s)

PERRY ET AL.

Examiner

Joseph E. Avellino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-79 is/are rejected.
- 7) ☐ Claim(s) 61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2, 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-79 are presented for examination. Claims 1, 27, 48, and 68 are independent.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 1-79 either directly or indirectly state the limitation "identifying a virtual channel and/or a protocol". It is indeterminable from the scope of the claims or the specification that if this limitation is configuring a virtual channel for a particular protocol, or a configuring a particular protocol for a specific virtual channel. As it is known in the art, a virtual channel and a protocol are not equivalent and cannot be interchangeable. However, the specification does disclose configuring a particular protocol on an associated virtual channel (p. 18, lines 23-29), and the Office requests the limitation "identifying a virtual channel and/or a protocol" be amended to read, "identifying a valid protocol for a particular virtual channel."
5. Claim 16 is further rejected as being indefinite due to the using of the limitation "approximately simultaneously". It is undeterminable from the scope of the claims as to

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what constitutes events occurring "approximately simultaneously". Correction is required.

Allowable Subject Matter

6. Claim 61⁴ would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7, 8, 20, 21, 25-31, 33, 43, 44, 46-52, 54, 55, 57, 62, 63, 67-69, 76, 77, and 79 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (USPN 6,012,088) (hereinafter Li).

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8. Referring to claim 1, Li discloses a method of providing automated assistance in configuring customer premises equipment for communication with another network element, comprising:

automatically identifying a virtual channel (analog modem 104, ISDN adapter 106, synchronous serial interface 108) and/or a protocol (i.e. configuring the internet access device including PPP protocol using PPP information 804, configuring modem, ISDN adapter, or serial interface using link information 802, etc.) valid for configuration with the customer premises equipment (Figures 4, 12; col. 6, line 64 to col. 7, line 11); and

assisting a user in configuring the customer premises equipment for use with the identified virtual channel and/or protocol (Figure 12 and pertinent portions of the disclosure).

9. Referring to claim 2, Li discloses identifying the valid virtual channel and/or protocol without prompting the user for information identifying the valid virtual channel and/or protocol (Figures 10-12).

10. Referring to claim 3, Li discloses identifying the valid virtual channel and/or protocol without prompting the user for input (Although it is seen that Li asks the user for a start command, this is not considered part of the automatically identifying step, one of ordinary skill in the art would consider the automatically identifying step to begin at step 612, Figure 10; after the user input is finished) (Figures 10-12).

11. Referring to claim 4, Li discloses identifying the valid virtual channel and/or protocol without accessing a memory storing the identification of the valid virtual channel and/or protocol (as determined in light of the specification, memory storing the identification is taken to mean "a predefined look-up table located on the customer premises equipment,") (Figures 10-12 and pertinent portions of the disclosure).

12. Referring to claim 5, Li discloses automatically determining a virtual channel and/or a protocol valid for configuration with the customer premises equipment comprises:

communicating over a virtual channel (one of an analog modem, ISDN adapter, or a synchronous serial interface) and toward a destination network element (POP and configuration server) a probing configuration signal (i.e. request for configuration) (Figure 12, reference character 720);

receiving over the virtual channel a response to the configuration signal (configuration record,) (Figure 12, reference character 724); and

identifying as valid for configuration the virtual channel and/or protocol associated with the response (configuration successful) (Figure 12, reference character 728).

13. Referring to claims 7 and 8, Li discloses the probing configuration signal comprises a signal having a self configuring protocol (i.e. PPPOE, and DHCP configuration request) (Figure 12).

14. Referring to claim 20, Li discloses assisting a user in configuring the customer premises equipment comprises automatically configuring the customer premises equipment for operation using the valid virtual channel and/or protocol (Figure 12).

15. Referring to claims 21 and 25, Li discloses communicating a diagnostic signal (i.e. dialing telephone number of NAS) toward a destination network element (i.e. POP site) (Figure 11a); and

determining and reporting on the connectivity of a network layer (i.e. physical layer, which is considered a network layer according to the OSI standardized model of network implementation) based on whether a response to the diagnostic signal is received (if the connection is unsuccessful, an error message is displayed) (Figure 11a).

16. Referring to claim 26, Li discloses the customer premises equipment 100 comprises a modem (Figure 4, reference characters 104-108).

17. Claims 27-31, 33, 43, 44, 46-52, 54, 55, 57, 62, 63, 67-69, 76, 77, and 79 are rejected for similar reasons as stated in the claims above.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6, 9-12, 22-24, 32, 34, 35, 45, 53, 64-66, and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of what is commonly known in the art.

20. Referring to claim 6, Li discloses the invention substantively as described in claim 5. Li does not specifically disclose the probing configuration signal comprises an F5 Operations, Administration, and Maintenance (OAM) loopback signal. However, it is well known and that the ATM networking standard includes various types of OAM cells

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that carry OAM related information that are used in administrative and supervisory actions and would provide a beneficial protocol to test for in the system of Li. Therefore it would have been obvious to include OAM signals to the system of Li to further provide more efficient transfer of network monitoring information and supervisory messages to network elements, resulting in enhanced failure detection.

21. Referring to claim 9, Li discloses the invention substantively as described in claim 8. Li does not specifically disclose the protocol comprises an Internet over ATM protocol, however it is well known that the Internet over ATM protocol is widely used in networks for its reliability and ability to allow multiple networks to communicate with one another. Therefore would have been obvious to one of ordinary skill in the art to incorporate the Internet over ATM protocol to the system of Li to allow the internetworking of multiple LAN systems further enhancing data exchanging and message transfer.

22. Referring to claim 10, Li discloses the invention substantively as described in claim 8. Li does not specifically disclose the protocol comprises a Point to Point over ATM protocol or Point to Point over Ethernet protocol, however it is well known that both of these protocols are widely used in networks for its reliability and secure communications between computing systems. Therefore would have been obvious to one of ordinary skill in the art to incorporate these protocols to the system of Li to allow

further robustness of the system and provide further enhanced customer service to those users who use those protocols.

23. Referring to claims 11 and 12, Li discloses the invention substantively as described in claim 5. However, Li does not disclose communicating the probing configuration signal over a plurality of virtual channels, only over the modem channel, however it would be obvious to one of ordinary skill in the art to modify the system of Li to allow the ISDN adapter 106 or the Synchronous Serial Interface 108 to send the configuration signal in order to provide a faster connection to the POP site than the modem connection which is commonly slower than an ISDN connection or a serial interface connection, thereby increasing the rate at which the CPE equipment is to be configured and thereby enhancing customer service. Furthermore it would also be obvious to send the signal over the virtual channels that are likely to return a response to allow the customer equipment to be configured more rapidly and to reduce the wait time for a connection by increasing the number of channels to connect the access device allowing for a more reliable connection in case the main channel is disabled or suffering an inordinate amount of delay.

24. Referring to claim 22, Li discloses the invention substantively as described in claim 21. Li does not specifically disclose the diagnostic signal comprises a PING signal operable to test an IP layer of the network, however it is well known that a PING signal is used widely to test and determine if a network element is connected (it is well

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known that hackers routinely ping random IP addresses to determine which IP addresses are in use by which addresses are able to return signals to the source computer). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a PING signal operable to test an IP layer of the network to determine if a network server is available to communicate with the interconnecting device of Li in order to determine which server to use in order to appropriately configure the customer premises equipment thereby providing more reliable connections and further enhancing customer service.

25. Referring to claim 23, Li discloses the invention substantively as described in claim 21. Li does not specifically disclose the diagnostic signal comprises a DNS signal operable to test a transmission layer of the network, however it is well known that a DNS signal is used widely to test and determine if the network element is connected and able to determine their appropriate location and to what network service they are connected (when a network client is connected to a network the first time, it is routine that the computer locate the DNS server in order to configure itself with the network for settings such as name server IP address resolution, etc.). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a DNS signal operable to test a transmission layer of the network to determine if a network server is available to communicate with the interconnecting device of Li in order to determine which server to use in order to appropriately configure the customer premises equipment thereby providing more reliable connections and further enhancing customer service.

26. Referring to claim 24, Li discloses the invention substantively as described in claim 21. Li does not specifically disclose the diagnostic signal comprises a HTTP request signal operable to test a application layer of the network, however it is well known that an HTTP signal is widely used to test and determine if the network element is connected and able to determine their connection capabilities under stress (numerous web server load testing systems will issue numerous HTTP GET requests in order to determine the capabilities of a particular server; furthermore it is widely known that Denial of Service attacks on servers by hackers use a flooding technique of HTTP requests in hopes to overload the server in order to produce a crash of the system). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate an HTTP signal operable to test a application layer of the network to determine if a network server is available to communicate with the interconnecting device of Li in order to determine which server to use in order to appropriately configure the customer premises equipment thereby providing more reliable connections and further enhancing customer service.

27. Claims 32, 34, 35, 45, 53, 64-66, and 78 are rejected for similar reasons as stated above.

Claims 19, 42, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of "Official Notice".

28. Referring to claim 19, Li discloses the invention substantively as described in claim 5. Li does not disclose displaying the valid virtual channel or protocol to a user, receiving the user's selection of the valid virtual channel or protocol, and configuring the customer premises equipment for operation using the selected virtual channel or protocol. "Official Notice" is taken that both the concept and advantages of providing for displaying the valid virtual channel or protocol to a user, receiving the user's selection of the valid virtual channel or protocol, and configuring the customer premises equipment for operation using the selected virtual channel or protocol are well known and expected in the art. It would have been obvious to one of ordinary skill in the art to include displaying the valid virtual channel or protocol to a user, receiving the user's selection of the valid virtual channel or protocol, and configuring the customer premises equipment for operation using the selected virtual channel or protocol to the system of Li to allow the user to choose which protocol to use when there is a plurality of protocols available, thereby allowing the customer some control over the configuration process, thereby enhancing customer service and reducing the complexity of the system in regards to how it is configured to the user.

29. Claims 42, and 75 are rejected for similar reasons as stated above.

Claims 15, 16, 18, 38, 39, 41, 60, 70, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Ohanian et al. (USPN 6,122,287) (hereinafter Ohanian) (cited by applicant in IDS).

30. Referring to claim 15, Li discloses the invention substantively as described in claim 5. Li does not disclose communicating over a virtual channel a plurality of probing configuration signals, each signal associated with a different protocol. In analogous art, Ohanian discloses another method of providing automated assistance in configuring network equipment wherein the system communicates numerous probing configuration signals, each associated with a different protocol, over the same virtual channel (col. 5, lines 25-39). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Ohanian with Li in order to allow different networks using a plurality of protocols to transfer data the ability to discern which protocol is being used in order to transfer the data as supported by Ohanian (col. 3, lines 33-43).

31. Referring to claim 16, Li discloses the invention substantively as described in claim 5. Li does not disclose communicating a plurality of probing configuration channels approximately simultaneously. In analogous art, Ohanian discloses another method of providing automated assistance in configuring network equipment wherein the system communicates numerous probing configuration signals approximately simultaneously (in its broadest sense, the user of the system could consider all of the

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probing configuration requests to occur approximately simultaneously since the timeout values recited are on the order of nanoseconds to milliseconds, which are insignificant to the user of the computer system) (col. 5, lines 25-39). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Ohanian with Li in order to allow different networks using a plurality of protocols to transfer data the ability to discern which protocol is being used in order to transfer the data as supported by Ohanian (col. 3, lines 33-43).

32. Referring to claim 18, Li discloses the invention substantively as described in claim 16. Li does not disclose communicating a plurality of probing configuration channels approximately simultaneously. In analogous art, Ohanian discloses another method of providing automated assistance in configuring network equipment wherein the system communicates numerous probing configuration signals approximately back-to-back (in its broadest sense, the user of the system could consider all of the probing configuration requests to occur approximately back-to-back since the timeout values recited are on the order of nanoseconds to milliseconds, which are insignificant to the user of the computer system) (col. 5, lines 25-39). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Ohanian with Li in order to allow different networks using a plurality of protocols to transfer data the ability to discern which protocol is being used in order to transfer the data as supported by Ohanian (col. 3, lines 33-43).

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33. Claims 38, 39, 41, 60, 70, and 72, are rejected for similar reasons as stated in the claims above.

Claims 13, 14, 17, 36, 37, 40, 56, 58, 59, 71, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Ohanian in view of Marullo et al. (USPN 6,185,701) (hereinafter Marullo).

34. Referring to claims 13 and 14, Li in view of Ohanian discloses the invention substantively as described in claim 5. Li in view of Ohanian furthermore disclose communicating a probing configuration signal over a first virtual channel (Ohanian, col. 5, lines 25-35). Li in view of Ohanian do not disclose communicating a signal over a second virtual channel before a timeout value associated with the signal communicated over the first channel expires. Marullo discloses a system which spawns numerous user threads (each thread is its own virtual channel, since each request issued by the user thread is routed back to the same thread) which communicate signals over a first VC and then a second VC by another user thread while not waiting for the timeout value to expire on the signal of the first VC (col. 21, line 23 to col. 22, line 17). It would be obvious to one of ordinary skill in the art to combine the teaching of Marullo with Li and Ohanian to allow numerous configuration signals over a plurality of virtual channels while not requiring to wait for a timeout with one channel for the second to increase the functionality provide by the system while reducing the amount of human error allowed

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and the subsystem is fully automated and run without user intervention, thereby freeing up users for other activities as supported by Marullo (Col. 22, lines 1-17).

35. Referring to claim 17, Li in view of Ohanian discloses the invention substantively as described in claim 16. Li in view of Ohanian further disclose communication a probing configuration signal over a plurality of virtual channels (see rejection for claims 11 and 12). Li in view of Ohanian do not disclose spawning a plurality of threads, and monitoring the probing configuration signal associated with each virtual channel using a separate thread. Marullo discloses spawning a plurality of threads (col. 21, lines 25-35), and monitoring the probing signal associated with each virtual channel (it is taken that each thread sets up its own virtual channel in order to communicate with the Internet) (col. 21, lines 24 to col. 22, line 17). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Marullo with Ohanian and Li to increase the functionality provide by the system while reducing the amount of human error allowed and the subsystem is fully automated and run without user intervention, thereby freeing up users for other activities as supported by Marullo (Col. 22, lines 1-17).

36. Claims 36, 37, 40, 56, 58, 59, 71, and 74, are rejected for similar reasons as stated above.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
38. Fijolek et al. (USPN 6,058,421) discloses addressing network host interfaces from a cable modem using DHCP.
39. Hart et al. (USPN 6,041,166) discloses virtual network architecture for connectionless LAN backbone.
40. Brewer et al. (USPN 5,918,016) discloses automating protocol assignments when newly connected to varying computer network configurations.
41. Fontenot (USPN 6,463,477) discloses detection of presence of multiprotocol encapsulation in a data packet.
42. Wang et al. (USPN 6,636,505) discloses service provisioning a broadband modem.

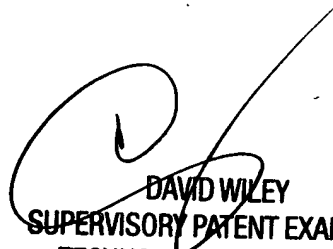
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (703) 305-7855. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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JEA
August 5, 2004



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100